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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/074,635 | 02/13/2002 | Pang-Chia Lu | 2002B005 | 7203 |
| 23455 | 7590 | 02/17/2004 | EXAMINER | |
| EXXONMOBIL CHEMICAL COMPANY P O BOX 2149 BAYTOWN, TX 77522-2149 | | | MAYES, MELVIN C | |
| | | ART UNIT | PAPER NUMBER | |
| | | 1734 | | |

DATE MAILED: 02/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.
Handwritten signature is present to the right of the table.

| | | |
|------------------------------|---------------------|----------------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/074,635 | LU, PANG-CHIA <i>EB</i> |
| | Examiner | Art Unit |
| | Melvin Curtis Mayes | 1734 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on ____.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) Claim(s) ____ is/are allowed.
- 6) Claim(s) 1-10 is/are rejected.
- 7) Claim(s) ____ is/are objected to.
- 8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on ____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All
 - b) Some *
 - c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. ____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/13/03, 5/12/03.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

(1)

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

(2)

Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Wood, Jr. 5,397,635 or Peet et al. 6,048,608, in view of Jennel 6,102,536.

Wood, Jr. discloses a method of making a multi-layer opaque, biaxially oriented polymeric film for packaging food products comprising: co-extruding a skin layer of polypropylene blended with titanium dioxide pigment (coloring agent) and a core layer of polypropylene blended with void-initiating particles (cavitating agent); biaxially orienting the film in the machine direction and transverse direction; and treating the skin layer to improve its receptivity to printing inks (col. 3-8). Wood, Jr. does not disclose passing the oriented film to a digital printer for printing indicia on oriented packaging film.

Peet et al. disclose a method of making an opaque, biaxially oriented polyolefin film for use for packaging food comprising: co-extruding a skin layer of pigmented polyolefin and an opaque layer of polypropylene and cavitating agent; and biaxially orienting the co-extruded film. Peet discloses that the polymer of the skin layer is chosen so that the skin layer can be printed (col. 2-6). Peet et al. do not disclose passing the oriented film to a digital printer for printing indicia on oriented packaging film.

Jennel teaches that in the packaging industry, while the commonly used printing techniques are gravure and offset, these techniques require a number of steps and create vast amounts of waste. Jennel teaches that a method of printing of a web of packaging material, such as a web of flexible plastic material, that eliminates the drawbacks of the previously known systems and allows for the immediate substitution of another digital image and on-demand production is a method in which an electronically storable and retrievable digital image is

generated, the image is transferred to a printing site and the digital image is printed directly on the web. The step of digitally printing can include using an inkjet printhead and a UV-reactive ink cured by exposure to UV light after printing. Jennel teaches that the step of printing can be provided in conjunction with a material processing line which may include extruders or may be provided in proximity with, or as a part of, a forming, filling and seal packaging machine (col. 2-6).

It would have been obvious to one of ordinary skill in the art to have modified the method of either Wood, Jr. or Peet et al. for making an opaque, biaxially oriented film for packaging by printing the packaging film with a digital printer, as taught by Jennel, to eliminate the drawbacks of the previously known printing methods of gravure and offset for printing packaging and to allow for the immediate substitution of another digital image and on-demand production.

Digitally printing the film using an ink jet printer and UV-curable ink, as claimed in Claims 2-3, would have been obvious to one of ordinary skill in the art, as taught by Jennel, as one type of printer and ink that can be used to digitally print a web of plastic material to be used for packaging.

Providing the step of digitally printing the film in-line with co-extruding and orienting the packaging film, as claimed in Claim 4, or off-line where a roll of the co-extruded and oriented packaging film is fed past the ink jet printer as part of converting the film to packages, as claimed in Claims 5-6, would have been obvious to one of ordinary skill in the art, as Jennel teaches that the step of printing can be provided in conjunction with a material processing line which may include extruders or may be provided in proximity with, or as a part of, a forming,

filling and seal packaging machine. Printing the film either during processing the film or during forming the film into packaging would have been obvious to one of ordinary skill in the art, as taught by Jennel.

(3)

Claims 1-6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Peiffer et al. 2002/0071960 or Frognet et al. 5,178,942, in view of Jennel 6,102,536.

Peiffer et al. disclose a method of making a biaxially oriented, multilayer polypropylene film for use as packaging comprising: co-extruding a top layer (skin layer) of polyolefin, an intermediate layer (transition layer) of polyolefin containing pigment (coloring agent) and an opaque base layer (core layer) of polypropylene containing vacuole-inducing particles (cavitating agent) from a die onto a take-off roll; and biaxially stretching (orienting) the resulting film longitudinally (machine direction) and transversely. Peiffer et al. disclose that the film can be easily processed on high-speed packaging and processing machines and should be readily printable [0013]-[0128]. Peiffer et al. do not disclose passing the oriented film to a digital printer for printing indicia on oriented packaging film.

Frognet et al. disclose a method of making an opaque, biaxially oriented film for packaging comprising: co-extruding a skin layer of polyolefin, an intermediate of polyolefin and titanium dioxide pigment (coloring agent) and a core layer of polypropylene and void initiating particles (cavitating agent); biaxially stretching the film; and treating the skin layer to improve its receptivity to printing inks. Frognet et al. disclose that the such cavitated or voided films are ideally suited for certain applications such as those employing form fill and seal machinery (col.

3-12). Frognet et al. do not disclose passing the oriented film to a digital printer for printing indicia on oriented packaging film.

Jennel teaches that in the packaging industry, while the commonly used printing techniques are gravure and offset, these techniques require a number of steps and create vast amounts of waste. Jennel teaches that a method of printing of a web of packaging material, such as a web of flexible plastic material, that eliminates the drawbacks of the previously known systems and allows for the immediate substitution of another digital image and on-demand production is a method in which an electronically storable and retrievable digital image is generated, the image is transferred to a printing site and the digital image is printed directly on the web. The step of digitally printing can include using an inkjet printhead and a UV-reactive ink cured by exposure to UV light after printing. Jennel teaches that the step of printing can be provided in conjunction with a material processing line which may include extruders or may be provided in proximity with, or as a part of, a forming, filling and seal packaging machine (col. 2-6).

It would have been obvious to one of ordinary skill in the art to have modified the method of either Peiffer et al. or Frognet et al. for making an opaque, biaxially oriented film for packaging by printing the film with a digital printer, as taught by Jennel, to eliminate the drawbacks of the previously known printing methods of gravure and offset for printing packaging and to allow for the immediate substitution of another digital image and on-demand production.

Digitally printing the film using an ink jet printer and UV-curable ink, as claimed in Claims 2-3, would have been obvious to one of ordinary skill in the art, as taught by Jennel as

one type of printer and ink that can be used to digitally print a web of plastic material to be used for packaging.

Providing the step of digitally printing the film in-line with co-extruding and orienting the film, as claimed in Claim 4, or off-line where a roll of the co-extruded and oriented film is fed past the ink jet printer as part of converting the film to packages, as claimed in Claims 5-6, would have been obvious to one of ordinary skill in the art, as Jennel teaches that the step of printing can be provided in conjunction with a material processing line which may include extruders or may be provided in proximity with, or as a part of, a forming, filling and seal packaging machine. Printing the film either during processing the film or during forming the film into packaging would have been obvious to one of ordinary skill in the art, as taught by Jennel.

(4)

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied to claim 1 in paragraph (2) or (3) above, and further in view of Bobo et al.

2002/0192482.

The references disclose providing or treating the film to improve its receptivity to printing inks.

Bobo et al. teach that polyolefin films for packaging have low surface energies which make them non-receptive to certain inks. Bobo et al. teach that the ink receptivity of plastic film, such as oriented polypropylene film, is increased to render the film computer imprintable by any of the available techniques such as industrial ink jet by providing the plastic film a coating composition [0002]-[0010].

It would have been obvious to one of ordinary skill in the art to have modified the method of the references as combined by coating the film with a print enhancing coating, as taught by Bobo et al., to increase the ink receptivity of the polyolefin film so as to render the film computer printable by the ink jet printer.

(5)

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied to claim 9 above, and further in view of Lu et al. 5,891,552.

Lu et al. teach that when using a coating composition to enhance the printability of plastic films, a primer can be used to enhance the binding of the coating to the uncoated film (col. 6, lines 53-56).

It would have been obvious to one of ordinary skill in the art to have modified the method of the references as combined by applying a primer coating to the film before applying the coating used to increase ink receptivity, as taught by Lu et al., to enhance the binding of the printability-enhancing coating to the film. The use of a primer coating to enhance the bonding of the ink-receptive coating to the oriented film would have been obvious to one of ordinary skill in the art, as taught by Lu et al.

Conclusion

(6)

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The references disclose methods of making oriented polyolefin films.

(7)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melvin Curtis Mayes whose telephone number is 571-272-1234. The examiner can normally be reached on Mon-Fri 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Melvin Curtis Mayes
Primary Examiner
Art Unit 1734

MCM
February 6, 2004